SOIL conservation

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The shadow cast by trees

It is almost a year since "Tree Time USA" was proclaimed by the American Forestry Association at its National Tree Planting Conference in New Orleans. The ambitious goal outlined in that proclamation is to plant 40 million acres of trees during the next 10 years.

The Soil Conservation Service is cooperating wholeheartedly. We have increased the emphasis on tree planting as part of our total responsibility. We are working to encourage the planting of 5 million acres of trees in the next 10 years by conservation district cooperators.

This too is an ambitious goal. And it's an expensive one. But it's important, because the demands made on woodland products and forested areas are increasing.

Trees do more than provide wood, paper, and other products. They are a home, or source of food, for many wild animals. They help hold the soil in place and add beauty to the environment. And they are a valuable aspect of many recreation areas.

About 59 percent of all forest land in the nation is held by about four million private landowners in amounts ranging from a few acres to four or five thousand acres.

Some of the woodland-for-wood has been mismanaged, and is producing only half its annual timber production potential. Other privately owned wooded areas could be improved for such uses as wildlife, erosion control, and recreation. Often, two or more uses can be combined if the owner desires this and knows how to accomplish it.

SCS people, with their "delivery system" of technical service to private landowners, can provide help with tree planting, restocking, thinning, and other silvicultural improvements. This work is carried out through conservation districts and is coordinated with the work of other federal agencies and state forestry agencies.

Trees cast a good shadow on the land. Let's continue to keep them green and growing for many purposes.

Kenneth E. Grant

SOIL conservation

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COVER: A dead sentinel in the Blue Ridge Mountains stands silent—a witness to the devastation of blight on American chestnut trees. See "In search of the American chestnut" on page 12. (U.S. Forest Service photograph)

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A tree farm revisited

by Carrow T. Prout, Jr.
Chief forester, SCS
Washington, D.C.

There's a tree farm in Fairmont, West Virginia, that has special significance for me. It was on that farm, back in 1961, that I helped demonstrate woodland conservation planning to other Soil Conservation Service people in West Virginia.

In woodland conservation planning, you give the owner a rundown on the kinds of soil he has on his farm, the potential of the soil for growing trees, and the hazards and limitations involved in managing the land for woodland purposes. Next you present alternatives and the various possibilities that can lead to good woodland use, and then you help the owner develop a plan for his land based on his own particular needs or desires.

That is what we did that day back in 1961. Armed with a soils map of the farm and an aerial photograph of the area, I accompanied Jim Crawford, the owner; Ross Mellinger, who was then the SCS forester for West Virginia; Don Hebb, a forester with the West Virginia Department of Natural Resources; and Law Helmick, then the SCS district conservationist in Fairmont, in a walk over the woodlands.

We discussed the soils, the kinds of trees that were growing, and the things Crawford could do to harvest a good timber crop and gradually improve and conserve his woodlands.

This year, after 12 years, I revisited Jim Crawford's tree farm. Crawford had been named West Virginia's Tree Farmer of the Year in 1971, so I was anxious to see what he had done with his woodlands since 1961.

The Crawford farm is snuggled back into the hills just out of Fairmont. It is a combination farm—part of the land is in pasture and hay crops and the rest in timber.

Bill, Crawford's 14-year-old son, and Fannie, the family collie, joined Crawford and me as we

The Tree Farm sign in front of Jim Crawford's house tells passers-by that Crawford is doing an excellent job in tree farming. Pictured with Crawford are his son, Bill, and the family collie.

(Left) The Soil Conservation Service helped with the layout of the many access roads on the Crawford tree farm. Harry Summers, Jr., SCS soil conservationist at Fairmont, West Virginia, takes a look at a newly constructed road.
(Right) Jim Crawford watches as John Gorman, SCS forester for West Virginia, counts the annual growth rings on an increment core from one of Crawford's yellow poplars.

walked along one of the many access roads on the farm that were laid out with SCS help. The grade of the roads is not too steep, so erosion is kept to a minimum. Also, all parts of the tree farm can be reached from the access roads.

In 1961, we had pointed out to Crawford that properly spacing trees would allow them to grow about 2 inches in diameter in 8 years. And with proper thinning, Crawford could cut timber at 8-year intervals.

Crawford followed up on our recommendations and divided his woodlands into four units. He harvests timber at 2-year intervals—one unit at a time. Thus, in 8 years his entire tree crop has been harvested.

We visited the first block or unit of timber that he had worked on. He had thinned one patch of young yellow poplar, and we looked at the results. An increment borer revealed that the trees remaining after thinning were performing nicely. There were eight rings to the inch.

On the rest of that first unit he had harvested timber in 1962. Where the trees were still immature, he had selectively cut the timber.

There were spots where the trees were mature, or scattered, or unmerchantable. Here Crawford clearcut small openings. We had explained to him back in 1961 that this kind of cutting served three purposes. First, it removed the trees that were mature, either by virtue or old age, and would not improve any more in value. Second, it created openings so young trees could be established, thus insuring all ages of timber in the same area. And third, these clearcut areas grow up in brush, along with desirable tree seedlings, making good wildlife food and cover.

We suggested to Crawford that he open a few acres each time he cut to encourage yellow poplar. The poplar was coming into the openings.

In one or two of the areas that Crawford had clearcut, large unmerchantable trees had been retarding the growth of desirable trees around them. These Crawford girdled and killed. Their usefulness did not end, however, because woodpeckers built their nests in those trees and squirrels made their homes in the tree hollows, which is one of the reasons why the trees were unmerchantable.

Gorman and Crawford measure the yellow poplar designated by West Virginia University as a superior tree and selected for use as a source of improved tree planting stock in West Virginia.

The remaining trees and the maze of brush and briars that grew into the openings along with the young tree seedlings provided browse and cover for deer, nesting places for birds, and homes for other wildlife.

I remembered an open field that in 1961 was more or less used as a pasture. It had begun to grow up in brush for the very simple reason that it was too far from the homestead to be managed intensively as a pasture and too steep and rough for the efficient use of farm machinery. We had talked about planting trees there.

We went to see that field. In 1965 or 1966, Crawford planted yellow poplar and white pine there. The yellow poplar today are 8 to 10 feet tall, growing nicely and beginning to overcome the briars and other brushy plants. Planting the white pine was Crawford's idea, and a good one. The trees are excellent cover for deer and other wildlife on the farm.

A new highway winding its way through the hills had taken several acres of Crawford's pasture land. Crawford used the money he received for that land as part of the payment for an additional 200 acres of forest land adjoining his farm.

We walked over to take a look at the new acquisition. I found thick stands of young poplar vigorously growing and just waiting for the love and tender care that a man like Jim Crawford can give them. There were many acres of large timber too—excellent stands of yellow poplar, in fact, they were superior stands.

West Virginia University, in looking for outstanding groves of yellow poplar and superior yellow poplar trees, had visited Crawford's farm and designated one of the newly acquired yellow poplars as a superior tree. Scions were taken from the tree to establish a seed orchard of superior yellow poplar trees for planting throughout West Virginia.

Jim Crawford listened well that day in 1961. He recognized the needs of his place for woodland conservation and developed a very workable plan. Most important of all, he is carrying out his plan and intends to continue working his woods according to the plan, modifying it as conditions change.

From my standpoint, seeing an individual put the philosophy of woodland conservation into action is a very satisfying experience and the ultimate of rewards to a forester. ♦

Help thy neighbor

by Christine Johnson
Correspondent, The Missoulian
Missoula, Montana

In frontier times a barn-raising was a community project—neighbors worked together to get a job done.

Many people feel that this "help your neighbor" spirit is dead and gone, but Clarence Neuman of Hamilton, Montana, can testify that it is alive and well in the area covered by the Bitter Root Resource Conservation and Development Project.

The Bitter Root RC&D Project spearheaded a program to rebuild a flood-destroyed bridge on the edge of Neuman's property. Neuman had neither the physical strength to do the work himself—because of a disabling kidney ailment—nor the money to have it done.

The Bitter Root RC&D brings together people from three counties to discuss and solve community problems. It's aims are to use, protect, and develop the area's natural and human resources and thus strengthen the economy and increase opportunities for good living.

The county commissioners of Mineral, Missoula, and Ravalli Counties and the conservation districts in those counties sponsor the RC&D project.

Bill Whittecar is typical of the men and women who are active in the project. He is a retired businessman whose know-how and interest in community affairs keeps him as busy as he ever was in his preretirement days.

When someone suggested to an RC&D committee that rebuilding Neuman's bridge might be a worthy project, Whittecar became the guiding force.

After weeks of telephoning and visiting potential helpers, Whittecar got the technical and financial help needed to do the work.

The Bitterroot Conservation District did the necessary surveying, and the Trapper Creek Job Corps provided labor as part of its vocational training program. Logs and other materials were donated by the U.S. Department of Agriculture's Forest Service, Ravalli County, and interested people. A local sawmill cut the logs, and a service station owner volunteered to haul them to the bridge site. Various service clubs, businesses, the Hamilton Chamber of Commerce, and neighbors provided noon meals for the Job Corps men while they worked.

Whittecar commented that he had never seen so many local groups working together on a project.

And the work goes on.

In other RC&D activities in Ravalli County, small industries using wood wastes have been started, including a bark-for-bedding industry that was granted a $72,000 loan from the Small Business Administration. The county's successful can-recycling drive started with a letter from an RC&D committee to the Anaconda Co.

In Missoula County a large group of people worked on developing greenbelts and recreational areas along the five rivers that branch out of the city of Missoula. The city farmers' market, another RC&D activity, is finishing a sucessful season.

In Mineral County a sanitary landfill has been started.

Local people think of the Bitter Root RC&D Project as providing both opportunity and a challenge—an opportunity to come up with new and worthwhile ideas and a challenge in following through. Therefore, they believe that the success or failure of any RC&D activity, whether building a new bridge or finding a new use for wood chips, rests squarely on their shoulders. ♦

The Bitter Root Resource Conservation and Development Project spearheaded the rebuilding of a flood-destroyed bridge. Trapper Creek Job Corpsmen provided the labor as part of their training program.

Arkansas: trees no crowd

by Max D. Bolar
Forester, SCS
Little Rock, Arkansas

When is an orchard not an orchard? When it's a hayfield—at least in Arkansas where tree planting across the state last March highlighted a program to stimulate multicropping: black walnuts with clean-tilled crops, hay, and pasture.

A lot of hopes are riding on the trial plantings. Walnut shelling companies hope to open up new sources of cultured nuts to improve their product and increase their output. Cooperating farmers hope to supplement their income by grossing an additional $100 an acre. Consumers stand to benefit by finding superior walnuts on the supermarket shelf, at prices they can afford. And manufacturers of veneer and other wood products will eventually have an increased supply of a wood that is fast becoming scarce.

The walnut program began in the fall of 1971 with a series of workshops conducted for Soil Conservation Service people and interested landowners. Conducting the workshops were representatives of two walnut shelling companies, the Hammons Products Company of Stockton, Missouri, and the Gravette Shelling Company of Gravette, Arkansas.

Wide spacing is the key to the program, the representatives explained. The walnut is not a dense shading tree, and with 40- by 40-foot spacing, not only can a second land use be maintained between the trees, but also the trees grow faster and produce abundant nut crops.

On some of the best soils a 21-inch sawlog may be produced in 35 years. The company representatives admitted that nut production figures are less certain but suggested that an annual yield of 100 pounds of nuts per tree is possible. At 4 cents a pound, 27 trees could gross $108 an acre.

Several factors combine to make black walnuts suddenly more interesting. Four cents a pound isn't likely to stimulate excessive interest in the hard work of nut production and harvesting. Now, however, prospective multicroppers face the reassuring prospect of greater nut production per tree, new mechanical or semi-mechanical methods of nut collection, and a better price.

Nuts can do for walnut trees what pulpwood has done for pine trees, the representatives explained. They can provide a backup product to sawlogs, making the total investment profitable.

Part of the companies' interest in walnut grove multicropping stems from the superior quality of cultured nuts compared to common nuts. Cultured nuts tend to be plumper and have high-quality white meat; common nuts have a greater percentage of amber meat. Cultured nuts produce 14 to 20 pounds of meat per 100 pounds of nuts; common nuts average only 8 to 10 pounds per hundred. The shelling companies not only prefer cultured nuts but pay more for them.

Based on what they learned at the workshops, 34 Arkansas landowners in 25 soil conservation districts decided to try black walnut multicropping. The Hammons Products Company donated 4,200 1-year-old seedlings of superior trees to participating soil conservation districts. And to assist in planting the seedlings, the Gravette Shelling Company loaned two 14-inch soil augers to be hitched to tractors. About 1,800 additional trees were purchased from the Arkansas State Forest Commission Nursery.

Planting of the 6,000 walnuts took 5 weeks. SCS helped, as did FHA, ASCS, USDA's Forest Service, the Arkansas Forest Service, the Extension Service, and vocational-ag groups.

In 1973, more than 19,000 walnut seedlings were planted on more than 600 acres belonging to 85 different landowners in 35 soil conservation districts.

In the tree planting operation, an engineering flag is placed at each planting site before planting begins. Each time a tree is planted, planting crews place a canvas blanket over the site. The blanket has a hole in the center, exposing the exact planting position.

The 14-inch augers bore 30-inch-deep holes to receive the trees. About half of the soil is immediately kicked back into each hole and tamped—this helps

stimulate root development and moisture storage.

Next in the planting operation, a volunteer gets down into the hole and holds the walnut seedling, which has a 14- to 17-inch root system, while the blanket crew of two or three men funnel the remaining soil back down through the hole in the blanket. The tree holder has to step lively to avoid being buried up to his knees by the blanket crew.

The crew moves on to the next flag while someone places a length of stove pipe over the planted seedling and sprays an area 4 feet in diameter around the pipe. The spray mixture eliminates grass and weed competition

After that, the trees are on their own.

For a time, all the landowners can continue their present land use. But in 6 to 8 years, the canopy from the trees will make soybean production and other tilled cropping difficult, and the land use will change, perhaps to pasture or hayland.

Most of the land planted in the program is already in hay, so no dramatic land use changes are expected. Rather, the walnut industry will be something over and above the present use of the land.

Because the walnut root system is deep, it will not compete with hay for nutrients in the soil. So the cows lose nothing, and the landowners, the walnut industry, and the consumer all stand to gain. ♦

Drilling 30-inch-deep holes is the first step in walnut tree planting.

(Left) Hays Beard, SCS area conservationist, holding a walnut seedling, does some fancy footwork to avoid being planted himself. (Right) Buck Harris, a cooperator with the Boone County Soil Conservation District, sprays around a planted seedling. The stovepipe protects the seedling during the spraying operation.

Thinking thin

by Richard S. Bainbridge
Soil conservationist, SCS
Bellingham, Washington

An unusual event every spring in north central Washington has all the flavor of an Iowa picnic.

At noon, men, women, and children laugh and talk as they relax and eat salad and sandwiches under trees along a brook.

In the evening, a festive beef dinner is followed by speeches and entertainment.

But for hours in the morning and afternoon the sounds are of work, not play.

The purpose of the outing is to thin dense stands of trees. And the end result is getting multiple use of the land—trees, livestock, and wildlife.

In recent years the work force has swelled from an original handful to nearly 400 people. But more important than numbers is the fact that sportsmen and cattlemen, local, state, and federal agencies, as well as public land users are represented on the force.

It all started more than 20 years ago: the Washington State Association of Soil and Water Conservation Districts asked the South Okanogan Soil Conservation District to develop ways of getting conservation and good land use practices applied on public lands. The district supervisors organized committees to inventory resource problem areas and to propose solutions.

One committee included representatives from the Omak Fish and Game Club and the Chiliwist, Loup Loup, and Ruby Cattlemen's Associations; the other included people from the Soil Conservation Service, the State Department of Natural Resources, and the State Department of Game.

Out of these committees evolved the annual outings to correct resource problems on public lands. In 1958, 12 men turned out on a day in spring to develop a fenced watering facility for wildlife and livestock.

The following year, 18 men turned out, again, to improve public areas for wildlife.

Four sportsmen's clubs in King County began taking an active part in the annual project. Then seven more groups in the county joined in: Association of Northwest Steelheaders, Izaak Walton League, Lake City Sportsmen's Club, Washington Game Bird Club, Poggie Club, Boeing Rod and Reel, and Issaquah Sportsmen's Club. Club members were later joined by their junior clubs and women's auxiliaries.

About 6 years ago, the project participants changed their emphasis from wildlife developments to tree thinning. Tree thinning is beneficial to at least four kinds of land use: timber production, watershed capabilities, wildlife feed and habitat, and cattle feed. It also allows grazing in areas that cattle previously could not move through.

Generally, the outings begin early on a Saturday morning. Children clean debris from nearby creeks and work at the

(Left to right) Preparing for a weekend stay at the site of the "tree thinning outing." Small groups with chain saws go into the thickets first. They are followed by pruners and stackers. The end result is a thinned forest, which allows multiple use of the land—trees, livestock, and wildlife.

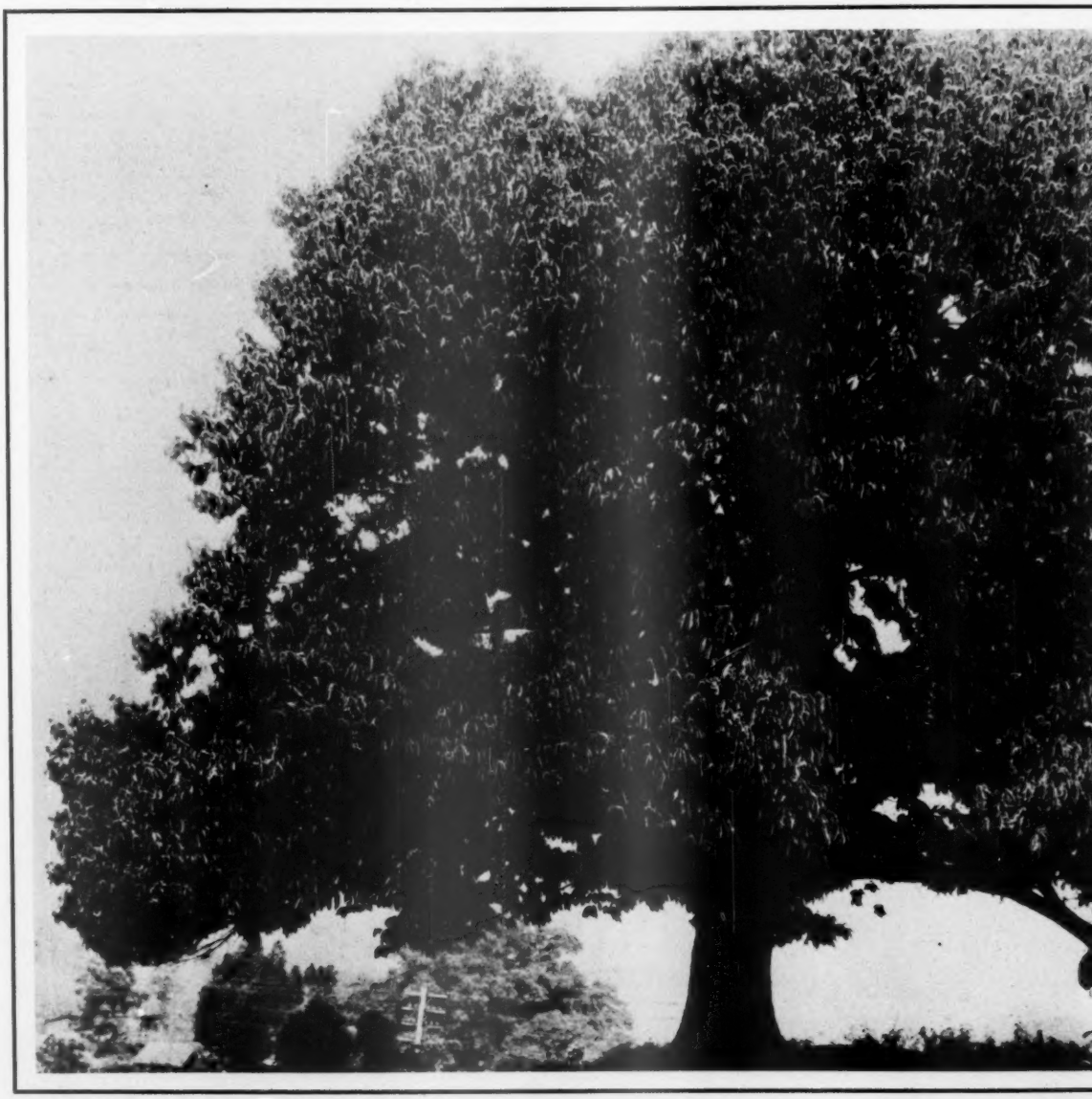
campground. The women begin to prepare lunch, and the men begin to thin timber.

Areas of state-owned land are set aside for this work. A few men begin cutting out the smaller trees and brush with chain saws. Others follow, piling all downed material into stacks. Stacks that won't burn then are burned in the fall. All areas are seeded to grass with help from the Department of Natural Resources and the Soil Conservation Service.

In the evening, the men join the women and children at the campground for an outdoor barbecue. The cattlemen's associations and the sportsmen's clubs usually alternate in donating the beef and other food.

The remaining work is finished on Sunday morning. Then, their annual weekend of work and fun over, sportsmen, cattlemen, and agency people take down the camp and make ready to return home. Teamwork has paid off once again. ♦

In
AMERICA



In 1915, when this photograph was taken, spreading chestnut
the American chestnut, for all practical purposes, is

n search of the AN CHESTNUT

by Vincent J. Price
Information Division, SCS
Washington, D.C.

stnut trees abounded in eastern forests. Today, es, is extinct. (U.S. Forest Service photograph)

Once the American chestnut tree abounded in eastern forests. Settlers from the earliest times roasted its nuts, a natural part of the New World's bounty. Colonial cabinetmakers prized its wood. American poets admired it: "Under the spreading chestnut tree, The village smithy stands." Naturalists considered the tree among the most stately and beautiful in American forests. And painters of the Hudson River School saw in the strength and natural splendor of the chestnut a symbol of the America of their time.

No more. The American chestnut is now, for all practical purposes, extinct.

A chestnut blight, somehow carried over from Europe in the early 1900's, is responsible. Starting from New York City, the blight devastated chestnuts in the northeast and then swept like wildfire south and west. By the early 1930's the blight had killed almost all American chestnuts.

Almost all, but not quite all.

Scientists all over the East attempted to save the chestnut. The U.S. Department of Agriculture's Forest Service launched an ambitious program in the 1930's to create a hybrid from the American chestnut and the Chinese chestnut. The American has a tall, upright trunk and is a valuable timber tree; the Chinese is squat—more a shrub than a tree—but is highly blight resistant.

Forest Service scientists hoped to come up with an upright blight-resistant tree. But it didn't work out that way. Instead, every hybrid retained the shrubby shape of the Chinese chestnut. Today, the descendents of these hybrids can be found in many states, still looking like Chinese chestnuts: low, shrubby trees without any timber value.

"Many problems extremely difficult to overcome occur in breeding chestnuts," according to Dr. K. R. Shea, Acting Director of the Forest Service's Forest Insect and Disease Research Division. "Resistant parent trees usually are of poor form and not satisfactory as shade or forest trees. Seedlings from crosses of resistant Asiatic with susceptible American chestnuts result in susceptible seedlings, and back crosses to resistant trees must be made. All of this takes time. Furthermore, resistance cannot be fully tested until trees are about 18 years old."

There are a few American chestnuts left today. In an area in the Great Smoky Mountains, at elevations higher than anyplace east of the Rockies, a few trees survive, simply because the blight itself is poorly adapted to the elevation. But these trees are only a handful.

There's a 40-year-old American chestnut in Jackson, New Hampshire. But it's sterile. It bears nuts, but without cross-pollination the nuts will never germinate.

Finally, there are thousands of young American chestnut saplings in eastern forests. Some of these survive long enough to produce nuts, then are blighted and die. Their nuts produce some trees that, in their turn, survive long enough to produce nuts and then die.

"Their death is in no way caused by the fruiting," explained Dave Allen, the Soil Conservation Service's state biologist in New Hampshire. "Many plants, just before they die, throw off one last effort to blossom and fruit. Perhaps it's something like that with the chestnuts."

However that may be, the young chestnut saplings do not survive much more than one blossoming—5 years or so at most, and then the fungus finds them. Yet those few years and few blossomings have managed to keep the species alive, and

might continue indefinitely.

"Give it a hundred thousand years and the American chestnut could be replaced with a blight-resistant strain," explained W. C. Young, the SCS regional plant materials specialist for the South. "Plant breeding could reduce this to a hundred years."

Plant breeding is where the Soil Conservation Service comes in. At several plant materials centers in the South, SCS has attempted to come up with a blight-resistant strain. The first step, the hardest, is to locate a mature American chestnut tree that is blight resistant. The search has been going on for some time.

The search entails a good deal of frustration. For example, a few months ago, the James E. "Bud" Smith Plant Materials Center at Knox City, Texas, received nuts supposedly from a pair of American chestnuts but found out later that the trees had been misidentified and were in reality Chinese chestnuts.

Often a tree is stripped of its nuts by squirrels or local roasted-chestnut enthusiasts before conservationists can collect nuts for propagation.

Then, too, there's the problem of cross-pollination. "We managed to get nuts from a tree in north Alabama," Young recalled, "and planted them at our center in Americus, Georgia. But the entire crop failed to germinate."

A mature American chestnut that is free of the blight is not necessarily blight resistant—perhaps just lucky in avoiding the disease. Carrow T. Prout, Jr., SCS's chief forester, remembers a grove of mature chestnut trees in Maine years ago. "One year we carted bushel-baskets of nuts down to Beltsville, Maryland. We thought we really had something. The next year all those trees in Maine were dead." As far as is known, that was the last American chestnut grove.

Some chestnuts that are quite old have survived the blight but are not blight resistant and are of little use for propagation. This is

Different weapons, the same target: Scientists are taking several different tacks in trying to solve the chestnut blight dilemma.

The University of Connecticut is studying the genetics of the fungus.

Stronghold, Inc., a private organization, is collecting nuts, irradiating them, and releasing them to be planted.

The Forest Service is working with a team of French scientists to develop an antitoxin. The French have developed an isolate which heals the cankers of the blight by killing the fungus. FS scientists in St. Paul, Minnesota, working with isolates obtained from France, hope to determine the responsible virus and find out what makes the strains so different. So far the virus hasn't even been located under an electron microscope. A further problem has been an inability, so far, to get the virus out of the French strains and into the American strains.

Finally, work is still being done in hybridization. Since 1947, the Connecticut Agricultural Experiment Station has sponsored this work, and Professor R. A. Jaynes still carries on the program.

Hopefully, if a blight-resistant strain of American chestnut can't be found, something else—genetic control, biological control, or mutation—can bring back a healthy American chestnut.

so because the American chestnut is a prolific sprouter, and sometimes a tree will grow back up again after being killed to the base by the blight. This can happen several times—the blight killing the tree, and then the roots generating a new sprout, which also is killed. A tree such as this, though it may be 15 years old, is not blight resistant. In addition, such a tree will be misshapen. Eventually, the continued sprouting will exhaust the root system, and the tree will die.

An exciting find by a Tennessee district conservationist has again raised some hopes that a blight-resistant specimen may have been found.

R. L. Dudney, SCS district conservationist in Carthage, Tennessee, was home for Christmas in Jackson County, Tennessee, when he discovered an American chestnut growing in a neighbor's woods. According to Charles M. Henninger, SCS woodland conservationist, "The tree is 13 inches in diameter and 50 feet tall. It has beautiful form. It looks like the chestnut trees I knew when I was boy."

What makes the find so important is that the tree definitely has had the blight but looks as though it has recovered.

The chestnut blight struck the main stem of the tree; there are a series of scars running up the trunk. But beneath the scars, where there ought to be dead wood, the vital cambium tissue is alive.

In March 1973, Dudney, along with Ray Ellis of the Tennessee Division of Forestry, collected cuttings of the tree for grafting and sent them to Dr. Eyvind Thor of the University of Tennessee, who is doing genetic work with chestnuts in the Southeast.

Dudney, who is now retired, and Ellis plan to harvest nuts from the tree and remove competing trees to give the chestnut more growing room. "The owner told us we could do anything we wanted." Dudney reported.

Dudney summarized the reasons for his optimism this way: "The tree has got to be blight resistant now to have lived this long."

Others, who have been frustrated time and again in their attempts to save the chestnut, are less optimistic. "The prospect for the chestnut looks dreary," said plant materials specialist Young, "but this is just the way it is. ♦

Chinquapins too: The chinquapin is a small tree closely related to the American chestnut. Like the chestnut, the chinquapin produces an edible nut in a burr, although the chinquapin nut is only about the size of an acorn. The Alleghany chinquapin was almost totally wiped out by the chestnut blight during the 1920's. The dwarf chinquapin fared better, because it is more resistant to the disease. SCS is working with dwarf chinquapin at plant materials centers in Georgia, Mississippi, and Florida.

(Left) This American chestnut tree, identified by David Allen, an SCS biologist, is growing on a poultry farm in Lee, New Hampshire. The tree is 40 feet tall, vigorous, and bears fruit. (Below) In 1925, these stately young American chestnuts in Virginia promised to provide first-rate timber. Within 10 years the entire forest was dead. (U.S. Forest Service photograph)

HOW YOU CAN HELP

Do you know of a mature, healthy American chestnut tree? If you do, you can help the Soil Conservation Service in its search for a blight-resistant chestnut. Let your local conservation district or the nearest SCS office know about the tree, or write to the woodland conservationist at the SCS state office.

Drying up that Mississippi mud

by Pam McPhail
Staff writer, The Clarksdale Press Register
Clarksdale, Mississippi

Sometimes not even a child's imagination can transpose his play area into a castle or western frontier, especially when in reality he plays in slimy mud filled with anything from broken glass and rusty cans to raw sewage. His world is often inviting only to mosquitoes and rats.

In the area of Deer Park in the northern section of Jonestown, Mississippi, the children play innocently in stagnant water almost year round. The Mose Bayou causes water to back up in the residential area, and because there is no means by which the water can flow away, a large part of the stagnant water remains beneath the houses.

When rainfall in the area is heavy during any given season, the water rises and often forces some families to evacuate, according to James Shanks, Jonestown alderman.

Shanks said that there has always been a problem with drainage in the bayou area of town, but in the past few years the situation has grown worse.

According to Shanks, there were several reasons why the problem had not been corrected. A lack of money in the town was one of the main ones—approximately 80 percent of the population is on welfare. The town's sewer project, now in the process of being completed, cost more than $800,000. Without the help of federal and state agencies the town could not possibly have afforded that system.

Unfortunately the sewer system will not correct the drainage problem caused by the Mose Bayou. But a project launched by Jonestown and the Northwest Resource Conservation and Development Project, in cooperation with the Coahoma County Soil and Water Conservation District and the Soil Conservation Service, may solve the drainage problem.

According to Shanks, the project, cost shared by the town of Jonestown and the Soil Conser-

Alderman James Shanks (right) shows Hiram Boone, SCS soil conservationist, part of the Jonestown area that has a critical drainage problem.

vation Service, will provide outlets for surface drainage in the town.

An employee of Delta Construction Co., which is helping to install the sewer system said, "It is a miracle these people didn't die years ago of typhoid fever from the conditions in which they live."

Shanks said that last year a little girl in the Head Start program contracted hepatitis after playing on the slime-covered ground. Shanks continued, saying that in summer mosquitoes make living conditions in the area almost unbearable. Even though the city sprays the area, there is a great problem. He said that because the children don't take proper care of mosquito bites, the welts often get infected.

Shanks and others have tried to have the drainage problem corrected, but they always got the "run around," as Shanks put it. Correcting the problem is a city problem, and the city doesn't have the money. Some of the lots are privately owned, but the owners don't have money either.

Hiram Boone, of the local Soil Conservation Service office, said that because cities and towns in Coahoma County have become part of the conservation district, SCS can furnish urban dwellers technical assistance in drainage, conservation, beautification, and other environmental improvement measures.

When the sewage system is complete, all residences in the area must be connected to the sewer line. This will eliminate all outdoor privies in the area, making living condition more sanitary.

And it will be several months before the surface drainage project gets underway, but people who have lived in the swampy area for as long as 10 years probably won't mind waiting a few more months. ♦

Alderman Shanks talks with some of the children living in an area where stagnant water surrounds more than 100 houses almost the year round. A surface drainage project that will remove the excess water is being planned for the area.

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A winner picks a winner

by Fred Trump
Information specialist, SCS
Salina, Kansas

Eric Haberer, his wife Marlene, and two sons and a daughter live in a century-old limestone house on their ranch in northwest Russell County, Kansas. The two children shown here are curious about the Halloween preparations.

"Outstanding — a real complete program," said Eric Haberer about the Great Plains Conservation Program.

That's a case of a winner picking a winner, for in 1972 Haberer, a Russell County farmer-rancher, was named the "outstanding young farmer" in Kansas by the Jaycees. The honor was bestowed on him for his farm management, conservation work, and community involvement.

"The biggest advantage of the Great Plains Conservation Program is its completeness," Haberer claimed. "It's carried out over a period of years, one thing one year, something else another year. You have a schedule as to how you are going to execute all the different phases of your conservation program. You are assured of the cost sharing every year and are guaranteed that the funds are there to complete the program."

This alert young man, a business administration graduate of Kansas Wesleyan University in Salina, has been farming for 9 years. He manages 530 acres of cropland and 1,470 acres of native grass rangeland.

Haberer lives on and operates the rented farm where he was raised. His scenic spread is located where a small saline stream breaks from the uplands into the broad Saline River Valley. Appropriately, a nearby community is named Paradise.

This is the unique limestone post country, where farmers at the turn of the century quarried limestone for fence posts.

"The owners of the farm have always been most cooperative on conservation ventures. Every acre of this land that needed it has been terraced for about 8 years," Haberer pointed out.

The Great Plains program part of his operations has been carried out on land that he and his wife bought 4 years ago.

"The most important work has been establishing terraces and waterways on my cropland," he said. "Already, in 2 years of farming with the terraces and grassed waterways I can see a big difference in the consistency of the soil.

"Along with the conservation practices on cropland, I've constructed a stockwater pit on rangeland that is supplied by spring water. I've also established mixed native grasses on 12 acres of former cropland that was marginal. The land that was seeded back to grass has to be fenced, and the Great Plains program helps with that.

"Overall, the work carried out under my Great Plains program contract is going to be a great economic help to me."

Haberer's livestock program consists of 110 Hereford cows. He sells 1½-year-old calves in the fall.

His crops include sorghum for livestock feed and wheat as a cash crop.

"I'm a great believer in stub-

ble mulching," said Haberer. "It has helped a lot in building up the humus content of the soil. It's one of the best ways I know of conserving moisture in the soil. The stubble on the surface protects the soil from the wind and rain. By keeping the residue as close to the surface as possible, the soil is going to be easier to till and it holds moisture better.

"It's very important to conserve all the moisture possible. Yearly precipitation here is only about 23 inches. We do strictly dryland farming in this area, except for a small acreage in irrigated crops next to the river. I apply water before spring planting, rather than in the summer when the river is low and the salt content high.

"In 2 years with terraces, I have been able to reduce water runoff. This, with stubble mulching, has made a big difference.

"Keeping the soil from washing into rivers and eventually into the Gulf of Mexico is going to be a major factor in pollution control. Everyone can benefit from conservation work in the uplands.

"Erosion control also brings a better environment to our game birds, deer, and other animals. And local merchants are helped by our being able to raise better crops.

"A young farmer neighbor recently asked me about the Great Plains Conservation Program. I recommended it to him, of course." ♦

A stockwater pit built under the Great Plains Conservation Program provides needed water on native grass range for Haberer's cattle. The corner posts are native limestone quarried at the turn of the century.

Haberer has his cropland terraced, and the terraces empty into grassed waterways. Most of the rain that falls stays on the land.

The sweep of sage or a sea of grass

by Dan S. Budd
President, Wyoming Association of
Soil and Water Conservation Districts
Big Piney, Wyoming

If I had my way, we in Wyoming would start at once to get a good grass back on the slopes where now you see mainly sagebrush.

I admit that the sweep of sage has a definite beauty. But to me, grass belongs there in a more realistic proportion.

People are inclined to believe that the sagebrush on our hills was always there. Originally the grass was there, and that's the way it should be again.

People seem to forget that with a heavy cover of sagebrush our soil resource is slipping away. Sagebrush can't hold the soil. The soil runs off into our streams and lakes. Some of us realize too late the value of our watershed as an essential part of our environment and our lives.

Much of the public land so important to us in livestock production is producing far less than its potential. But I have seen such land brought back to strong, healthy grass cover. To do that you have to control the sage and rest the land from grazing until the grass is reestablished. You have to seed grass in places. And you manage grazing so that the grass remains vigorous while supporting the cow and wildlife population of which it is capable.

There are millions of acres in Wyoming and other states in the West with such a heavy infestation of brush that worthwhile grasses cannot grow. The sagebrush in our area was not always so thick. When my grandfather ranched on these slopes, sagebrush shared the land with good grass.

The vast Wyoming acreages now in sagebrush, including public lands, can be brought under conservation management with a minimum of cost. The returns will far outweigh the outlay. My family has proved this on our own land.

In a few years, I believe our ranch will be able to support 1,000 mother cows—that's one-third more than we now have.

And how many more elk, deer, and antelope? And sage grouse? Easily twice as many and probably a lot more.

The Budd family came to this country west of Big Piney in southwest Wyoming five generations ago. The original ranch was less than 1,000 acres. My father started our present ranching enterprise in the 1950's. It now covers 8,900 acres. Some of it is irrigated and in hay; most, though, is in steeply sloping range or high mesas.

In summer we put our cattle on 4,900 acres administered by the Bureau of Land Management and on 6,300 acres of national forestland. This privilege is important to us. It lets our grass recover in the growing season.

In the 1950's we began work on our conservation ranch plan. What we have accomplished through conservation work is equal to doubling the size of our ranch.

We controlled brush. We built cross fences for better grazing management. We made sure there was water where it was needed to get good grazing distribution and where the stock could get to it. On our irrigated land, we used modern methods to make the most use of the water available to us. We keep a good supply of hay in reserve.

The results have been better than we expected. Land that carried 350 head of cattle when we started now supports 650 mother cows, and this is improving all the time.

To the people who contend that our control of brush is bad for wildlife, I have this to say. The elk that my grandfather used to see here, but which were missing for years, are back. Deer and antelope seem to prefer these pastures to the areas where there may be more cover but less palatable food. And sage grouse are present in great numbers.

Ranching in this country is never easy. Sometimes in winter this is the coldest place in the nation. At best, our growing season is 65 days long. Then, like others, we sometimes have the problem of depressed prices along with higher costs, so we don't show a profit every year.

Still, this is home to us, and we would be reluctant to live anywhere else ♦.

(Above) Dan S. Budd, left, and Dom Feeley, SCS area conservationist, observe the effect of sagebrush control on a Budd pasture. Budd says his treatment program leaves ample sage for wildlife food and cover. (Left) Dan Budd has a seasoned helper in 15-year-old Karen. She and her sisters, Janet and Martha, represent the fifth generation of Budds in Wyoming ranching.

Recon . . .

Tree-mendous success. One of the objectives of Pennsylvania's Monroe Conservation District is to encourage tree planting, so district directors decided to have a seedling sale. Not knowing what the public response might be, the district ordered 10,000 seedlings. Boy Scouts agreed to sell and distribute. Announcements and news releases went out, and orders started to come in. By the time sale-day arrived, it was necessary to order 5,000 more trees to satisfy actual and anticipated sales. Sales were so overwhelming that the district extended the sale period and accepted orders for an additional 17,000 seedlings.

Erosion—money down the drain. According to a survey made by the University of Missouri, loss of valuable topsoil means money down the drain. Height of young plants, survival rate of the crop, and yield are all adversely affected by erosion. Production costs can increase up to 56 percent in severely eroded areas. The Missouri scientists found that a slightly eroded field netted farmers slightly less than an uneroded field; moderate erosion dragged net income down $18.32 an acre; and severe erosion cut into farmers' pocketbooks at the rate of $33.20 per acre.

Junked—every year: 48 billion cans, 30 million tons of paper, 4 million tons of plastic, 26 million bottles and jars, 7 million autos and trucks, and nearly 8 million television sets.

Mt. Trashmore, farewell. Officials in Virginia Beach, Virginia, are thinking of saying goodbye to Mt. Trashmore, the sanitary landfill that was to be a recreation site. Sanitary landfills are better than open dumps, but if Virginia Beach continues to heap its trash and throw soil on top of it, officials fear the city will become the first mountainous municipality on the Atlantic Coast. Now they have a new plan. Before burying its trash, Virginia Beach hopes to process it. Iron and steel will be collected by magnet and sold to junk dealers; aluminum and copper will be sorted out, steam cleaned, and compacted for recycling; and glass also will be removed and marketed. What's left after that will be put in a 2,000-degree "oven" that will produce steam for use as energy in nearby buildings. This incinerator will be low-polluting.

Acres for wildlife. The South Dakota Department of Game, Fish, and Parks has adopted an Acres for Wildlife program similar to the one established in Nebraska. Under the program, landowners enroll parcels of land and agree not to burn, graze, mow, or apply harmful chemicals to that land. Any rural area 1 acre or more in size can be enrolled. Already 1,420 landowners have enrolled 62,181 acres, including a whopping 32,000 acres of railroad right-of-way enrolled by the Milwaukee Road. Seven states now have an Acres for Wildlife program. The others, besides Nebraska, are Kansas, Minnesota, North Dakota, Oklahoma, and Wyoming.

A hole lot of uses. Seems a shame to let good holes in the ground go to waste, or so it seemed in Kent County, Maryland, after 4 carefully selected pits had been excavated and used for the 13th National Collegiate Soil Judging Contest. The University of Maryland, which hosted the contest, opened up the holes to the public. A UM soil classification class made use of the pits and was followed by a soils seminar for farmers, realtors, and contractors, sponsored by the university, SCS, the Kent Corn Improvement Association, and the Kent Soil Conservation District.

State and county sanitarians were next, studying the pits in line with their interest in soil as a medium for waste disposal. A high school vocational agriculture class stepped in after the sanitarians; then the Kent County High School land judging team used the pits for training; and finally the Eastern Shore High School Land Judging Contest was held at the well-used pits.

Somewhere in this crush of people, Dr. Roy Simonson, assistant to the SCS Deputy Administrator for Soil Survey, photographed the sites to add to his collection of "soils of the world." Not bad for just some holes in the ground.

KEEP OFF THE GRASS—and they mean it in Pennsylvania. A 1939 law—Public Law 872 (Act 375), Section 932—in the Keystone State governs the protection of trees and plants and makes the willful walking on grass a misdemeanor with a fine of $300 or a 6-month prison sentence, or both, upon conviction.

Youngest district chairman??? Centre Conservation District directors believe they have the youngest district chairman of any conservation district in Pennsylvania and even in the United States. After 12 years as chairman, John Stover turned over the gavel earlier this year to Carl Homan. Homan, who is 23, has been a director for 2 years.

Review

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Michigan

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Mississippi

Lee County. By Miles C. Garber. *1973. Soil Conservation Service in cooperation with Mississippi Agricultural Experiment Station. 72 pp., illus.; maps.*

New Hampshire

Strafford County. By Frank J. Vieira and Richard W. Bond. *1973. Soil Conservation Service in cooperation with New Hampshire Agricultural Experiment Station. 96 pp., illus.; maps.*

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Ohio

Warren County. By Dale E. Garner, Neil E. Reeder, James E. Ernst, and Norbert K. Lerch. *1973. Soil*

Meetings

October

- 16–19 National Future Farmers of America, Kansas City, Mo.
- 21–24 American Chamber of Commerce Executives, Cincinnati, Ohio
- 21–25 American Institute of Planners, Atlanta, Ga.
- 21–25 Association of Official Seed Certifying Agencies, Detroit, Mich.
- 21–26 American Water Resources Conference, Seattle, Wash.
- 22–24 Urban Land Institute, Lake Tahoe, Nev.
- 22–25 Second International Pollution Engineering Congress and Exposition, Philadelphia, Pa.
- 22–26 Association of Engineering Geologists, Los Angeles, Calif.
- 28–30 Southeastern Agricultural Chemicals Association, Pine Mountain, Ga.
- 28–Nov. 1 Adult Education Association of the USA, Dallas, Texas
- 29–31 American Plywood Association, Atlanta, Ga.
- 29–Nov. 2 American Society of Civil Engineers, New York, N.Y.

November

- 1–3 National Council for Geographic Education, Washington, D.C.
- 7–8 Twelfth Annual Purdue Air Quality Conference, Indianapolis, Ind.
- 11–14 National Association of State Universities and Land Grant Colleges, Denver, Colo.
- 11–15 American Institute of Chemical Engineers, Philadelphia, Pa.
- 11–16 American Society of Agronomy, Crop Science Society, Soil Science Society of America—Joint Annual Meeting, Las Vegas, Nev.
- 12–14 Geological Society of America, Dallas, Texas
- 12–16 National Water Resources Association, Phoenix, Ariz.
- 12–16 American Association of State Highway Officials, Los Angeles, Calif.
- 12–20 National Grange, 107th Annual Session, Lincoln, Nebr.

December

- 2–5 National Conference on Access to Recreational Waters, Fort Lauderdale, Fla.
- 2–6 National League of Cities, San Juan, Puerto Rico
- 2–8 National Association of Manufacturers, New York, N.Y.
- 5–7 Western Forestry and Conservation Association, San Jose, Calif.
- 11–14 American Society of Agricultural Engineers, Chicago, Ill.
- 12–14 Geological Society of America, Dallas, Texas

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South Umpqua Area. By Ellsworth M. Richlen, *1973. Soil Conservation Service in cooperation with Oregon Agricultural Experiment Station. 60 pp., illus.; maps.*

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Fayette County. By Frank A. Kopas. *1973. Soil Conservation Service in cooperation with the Pennsylvania State University Agricultural Experiment Station and Agricultural Extension Service; and the Pennsylvania Department of Agriculture, State Soil and Water Conservation Commission. 108 pp., illus.; maps.*

South Carolina

Lancaster County. By Vergil A. Rogers. *1973. Soil Conservation Service in cooperation with South Carolina Agricultural Experiment Station. 129 pp., illus.; maps.*

Tennessee

Obion County. By William T. Brown, Wesley C. Jackson, Glisson L. Keathley, and Charles L. Moore. *1973. Soil Conservation Service in cooperation with Tennessee Agricultural Experiment Station. 58 pp., illus.; maps.*

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